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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER


HAFIZ, MURSALIN B

ART UNIT PAPER NUMBER

2814

DATE MAILED: 03/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/764,469	<b>Applicant(s)</b> SUN ET AL. 	
	<b>Examiner</b> Mursalin B. Hafiz	<b>Art Unit</b> 2814	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 10 January 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-12 and 21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 and 21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Response to Amendment***

1. Amendment filed on January 10, 2006 is acknowledged. Claims 1, 8 and 9 were amended and new claim 21 was added.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Glenn et al (US 6,624,921 B1) newly cited, in view of Tanaka et al (US 6,562,217 B1) previously applied.

Regarding claim 1, Glenn disclosed in Fig. 9 a package [900] of semiconductor device [114] with a flexible wiring substrate [902] [column 9 lines 53-56], comprising:

a semiconductor substrate [112] having semiconductor device [114] and at least one pad [116] on a surface thereof;

a plate [152] located above said surface of semiconductor substrate [112], semiconductor device [114] is covered by plate [152], and at least one pad [116] is uncovered by plate [152];

a bump [906] bonded to said pad [116];

flexible wiring substrate [902] having at least one contact section being electrically connected with bump [906].

Glenn does not disclose an adhesive layer on said bump and said flexible wiring substrate having at least one contact section being electrically connected with said bump by said adhesive layer. However, Tanaka teaches an analogous connection in Fig. 50 and adhesive layer [conductive resin fine particle] is used on the bump [gold bump] to electrically connect the flexible wiring substrate [substrate] with the bump [gold bump]. It would have been obvious to one of ordinary skilled in the art at the time of the invention was made to incorporate the connection as it is taught by Tanaka into the device of Glenn at least to improve the connection reliability [column 7-8].

Regarding claim 2 and 3, Tanaka disclosed in Fig. 50 that the bump is gold stud bump [gold bump].

Regarding claims 4 and 5, Tanaka disclosed that the adhesive layer includes non-conductive paste [resin, column 5 line 10].

Regarding claims 6 and 7, Tanaka disclosed that the adhesive layer includes anisotropic conductive paste [conductive resin fine particle, column 5 line 10].

3. Claims 8-12 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Glenn et al (US 6,624,921 B1) newly cited and Tanaka et al (US 6,562,217 B1) previously applied in view of Hamamoto et al (US 6,800,836 B2) previously applied.

Regarding claim 8, Glenn and Tanaka met all the claimed limitations semiconductor device but did not teach that semiconductor device comprises one or more image sensors. However, Hamamoto teaches an analogous device in Fig 4 and

Art Unit: 2814

7B, a semiconductor substrate [1] having image sensors [100] on the surface thereof having said pad [1031] and a transparent plate [2] covered on the surface of said semiconductor substrate having said image sensor 1100]. It would have been obvious to one of ordinary skill in the art at the time of the invention was made to incorporate Hamamoto's device into Glenn's device at least to use Glenn's device as an image pick up device [column 2 line 67].

Regarding claim 9, Glenn disclosed that the plate [152] is a transparent plate [column 3 lines 16-17].

Regarding claim 10, Tanaka disclosed in Fig. 50 that the bump is stud bump [gold bump].

Regarding claims 11, Tanaka disclosed that the adhesive layer includes anisotropic conductive paste [conductive resin fine particle, column 5 line 10].

Regarding claims 12, Tanaka disclosed that the adhesive layer that includes non-conductive paste [resin, column 5 line 10].

Regarding claim 21, Hamamoto disclosed in Fig. 2 that the plate [2] is held by an adhesive material [6] and located above said semiconductor substrate [1] [column 5 lines 35-37].

### ***Response to Arguments***

Applicant's arguments with respect to claims 1-12 and 21 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mursalin B. Hafiz whose telephone number is 571-272-8604. The examiner can normally be reached on m-f 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael Fahmy can be reached on 571-272-1705. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2814

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Mbh



HOAI PHAM  
PRIMARY EXAMINER